

These measurements prove that the cranial part of the skull is relatively somewhat larger in *Ps. Grayi* than in *Ps. crassidens*, and that the whole animal may have been consequently stronger and stouter than the European species, exceeding the Australian one still more in both qualities.

The description and figures of the swimming Delphinide, seen by myself in the Atlantic Ocean and published in my 'Anales,' p. 368, do not belong to the *Pseudorca Grayi*, as I supposed, but to a true *Globiocephalus*, which cannot be determined exactly without further observations.

Buenos Ayres, April 24, 1872.

#### VI.—On *Emys nigra* from Upper California.

By Dr. J. E. GRAY, F.R.S. &c.

*EMYS NIGRA* of Hallowell is said to be the same as *Emys marmorata* of Baird and Girard, which Agassiz, in his great work on the Natural History of the United States (of which only the general observations and the tortoises have appeared), refers to the genus *Actinemys*, and figures the young of the species; and on his authority (for I have never been able to see the species) I have arranged it under *Geoclemmys* (see Cat. Shield Reptiles, Suppl. p. 27).

In Hallowell's Report on the Reptiles collected in the Survey for the Railroad from the Mississippi to the Pacific Ocean, 1859 (a work which I had not previously consulted), he describes and figures *Emys nigra*, which he says is very abundant in Posa Creek, northern part of Upper California. The figure represents a very depressed water-*Emys*, with a dark narrow band across the eye, broad webbed feet, with acute elongated claws. The head appears to be covered with a uniform skin, not divided into symmetrical plates. The limbs and tail are marked with large black spots; and the upper part of the head and neck is blackish, with numerous small yellow spots.

The skin of the head and limbs more resembles that of the true Terrapins than any other American species I know; and it would be very interesting to know the form of the jaws. It certainly is a purely aquatic tortoise, and has nothing to do with the more terrestrial tortoises of America forming the genus *Geoclemmys* or *Actinemys*.

Mr. Hallowell's figure is very like a specimen that I obtained at Nantes, and which I described and figured as *Emys olivacea* in the 'Catalogue of Shield Reptiles,' p. 30, t. 12 c, and which is named *Redamia olivacea* in the Supplement to that Catalogue, p. 35.

The specimen only differs from Mr. Hallowell's figure in being marked with brown lines beneath, and in having more elongate claws; and I strongly suspect that they are both the same species.

VII.—*Experimental Researches upon the Position of the Centre of Gravity in Insects.* By FÉLIX PLATEAU\*.

THE study of the conditions of equilibrium of living creatures, I need scarcely say, is only possible when we know in each of them the situation of the *centre of gravity*. Now that the knowledge of the mechanics of the Articulata has made considerable progress, thanks to the employment of processes of investigation borrowed from physics, it seemed to me that it would be really useful to describe an easy method of investigating the centre of gravity of the Articulata, and to give an account of the results which its application to insects has enabled me to obtain.

Unfortunately I cannot, in a mere summary, give a description of the instrument I have employed. A mere short description without a figure is of necessity obscure and of no use at all. I shall only say that this instrument nearly reproduces, on a small scale and with some improvements, that which was invented by Borelli to determine the position of the centre of gravity in man. As to the results of my experiments, I must likewise refrain from giving them under the form which they take in my memoir—that is to say, in the shape of a considerable number of figures brought together in several tables. I shall therefore confine myself to the indication of the general conclusions which I have thought I might deduce from them, supporting these, where necessary, by a few examples.

1. The centre of gravity of insects is situated in the vertical median plane which passes through the longitudinal axis of the body.

2. It occupies a very nearly identical position in insects of the same species and of the same sex in the same attitude.

3. It is rarely that the external form of the body allows us to determine, *without experiment*, the exact position of the centre of gravity. I shall cite, as an example, the results furnished by the family of the Odonata. All its representatives have nearly the same external aspect; and yet, notwithstanding this quasi-identity of structure, I have found the

\* Bibliothèque Universelle: Archives des Sciences Physiques et Naturelles, tome xliii. 1872, from an abstract communicated by the author.